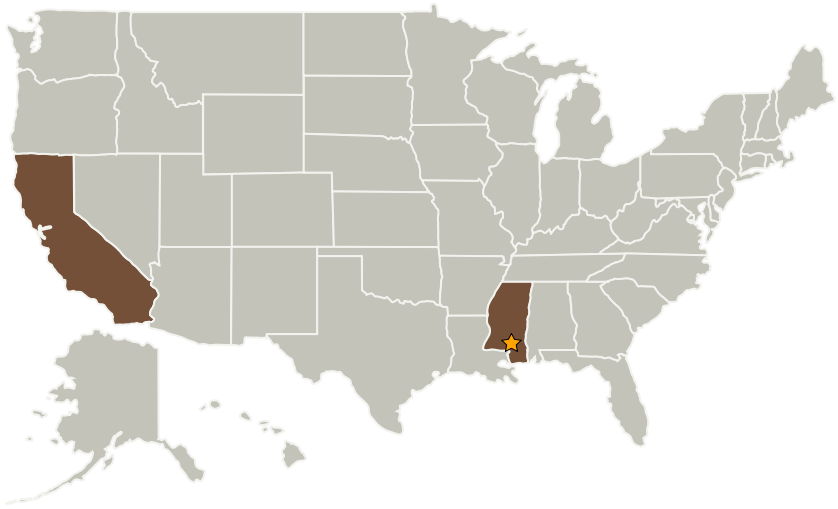
Process-Hardened, Multi-Analyte Sensor for Characterizing Rocket Plum Constituents Under Test Environment, Phase I

Completed Technology Project (2008 - 2009)

Project Introduction

This STTR project aims to develop a process-hardened, simple and low cost multi-analyte sensor for detecting components of rocket engine plumes. The sensor will be constructed with materials for operating continuously at 550 OK. It will also withstand temperatures as high as 2100 OK for at least five seconds. NASA roadmaps point towards new hydrocarbon fueled engines. A non-intrusive instrument suitable for monitoring plume signature with high degree of reliability will facilitate this future development. Tasks are designed to establish the device feasibility by detecting carbon dioxide and kerosene in air over 0-1% (v/v) range in the presence of 100% moisture. The sensor array chip is capable of holding indicators for tens of analytes. A major aerospace company has expressed strong interest in the proposed technology for integrating in their test facilities. InnoSense LLC (ISL) will develop, characterize and field-test the prototype in Phase II. For assuring success of this project, ISL has assembled a technical team with a cumulative 90 person-years of experience in developing commercially viable sensor systems.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Stennis Space Center (SSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Stennis Space Center(SSC)	Lead Organization	NASA Center	Stennis Space Center, Mississippi
Innosense, LLC	Supporting Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Torrance, California

Primary U.S. Work Locations	
California	Mississippi

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Shelly Mechery

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
  - TX15.1 Aerosciences
    - TX15.1.5 Propulsion Flowpath and Interactions